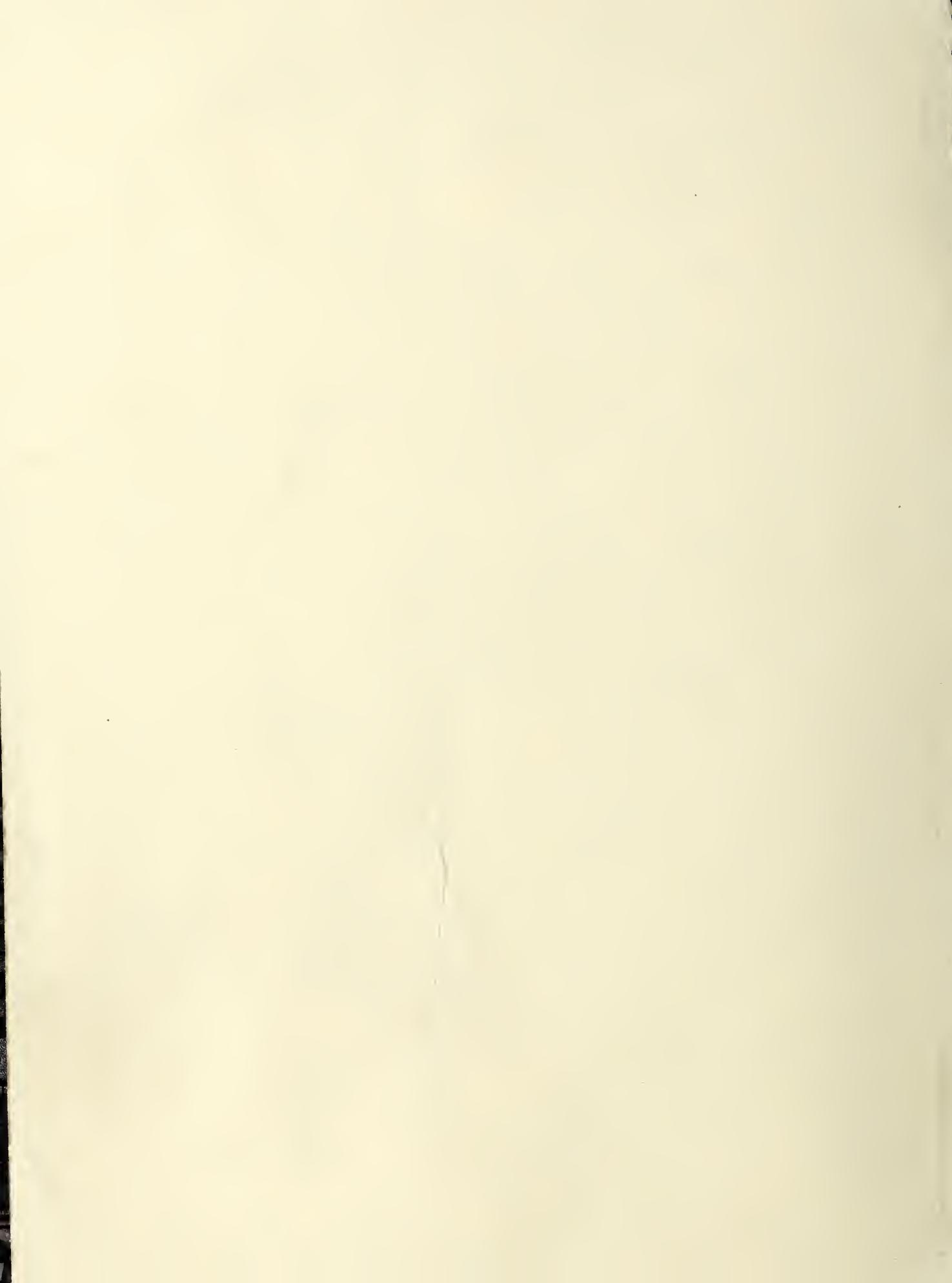


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# The National Forests

IN THE PACIFIC NORTHWEST - 1970

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### Cover Photos

Roaring wildfire lights the night sky above Mad River near the town of Ardenvoir in the Entiat Valley, during the Gold Ridge Fire in the Wenatchee National Forest. This was just one of the many blazes caused by lightning during the 1970 wildfire ordeal in north-central Washington. Among the thousands of persons committed to the fire-fighting effort were Charlie Caldwell, foreman of the Redding, California, "Hotshot Crew" on the Mitchell Creek Fire, and Miss Pat West, Entiat, who volunteered as a timekeeper's assistant on the Gold Ridge Fire.



# The National Forests

## In the Pacific Northwest -- 1970

U.S. Department of Agriculture  
Forest Service  
**Pacific Northwest Region (R-6)**

**T**he 1970's have been designated as the "decade of the environment" by many informed Americans. Based upon its first year, this could be a very accurate prediction.

From the standpoint of the Forest Service the environmental crusade, as revealed in 1970, has certainly involved a fresh look at the old job. Although the basic management direction which guides the Forest Service in its land management responsibilities hasn't changed, there has been material change in 1970 in how the job is done. Congress, by passage of new legislation involving air and water pollution and environmental quality, has prescribed new direction. New knowledge accumulated by experience and research in such areas as slash disposal, logging methods, forest utilization, recreation preferences, and related subjects have provided new insights. Moreover, new public interests and values as determined by general attitudes in land classification, forest management methods, and public involvement, have caused reappraisal of past approaches.

With the thought in mind, therefore, that we are carrying out the same basic mission but with new methods, it is well to examine progress made in 1970. Sharp changes in direction won't be detected, but responsiveness to current needs and demands is evident. Regrettably the age-old enemy — fire — was dominant in 1970, and we met it head-on even at the expense of other activities.

Your critical review of these Forest Service activities is desired and your comments are strongly solicited.

Very sincerely yours,

*Chas. A. Connaughton*  
CHAS. A. CONNAUGHTON  
Regional Forester

Once a place of beauty, this was the dismal scene along the Entiat River a day after flames leaped the river to help form the 52,721-acre Entiat Fire in the Wenatchee National Forest.

All photographs by the Forest Service, unless otherwise credited.



## **Wildfire in the Forests - 1970**

**C**rackling and slashing through the blackened skies, lightning has been a spectacle held in awe by mankind through the ages.

In the beginning, man and animals alike were probably quick to associate the blinding flashes and thunderous roars with catastrophic wildfires that followed.

The fires destroyed prairie and forest, often claiming the lives of humans and animals. Floods were apt to follow on the denuded lands.

So it has been over the milleniums.

In 1970, the fearsome pattern of lightning and wildfires happened again. This time, the main setting was the high, wide and beautiful land embraced by the Wenatchee and Okanogan National Forests in north-central Washington. Two rainless lightning storms, one in July and one in August, set 318 fires on National Forest lands — mainly on the Wenatchee and Okanogan — and



Foreman Charlie Caldwell leads his Redding (California Region) "Hotshots" into a crucial area for a flanking attack on the big Mitchell Creek Fire in the Wenatchee and Okanogan National Forests.

the fires blackened 141,168 of the Region's total of 160,911 acres burned in 1970.

How could this have happened, one might ask, in this era of sophisticated fire-fighting methods?

There hasn't been that much fire loss since 1929, when 395,116 acres of Forest Service-protected lands were scoured in Oregon and Washington. And 1929 was all before the advent of helicopters, smokejumpers, aerial tankers, and many of the other modern firefighting tools and techniques.

The stage for 1970's fire disaster began to be set in March, starting a three-month spring cycle of dry weather. Lack of rain is to be expected east of the Cascades in summer, but spring usually brings fair amounts of moisture. Not so in 1970. Less than one inch of rain fell on the Wenatchee and Okanogan National Forests during the three months preceding the "normal" dry period.

By early summer, the National Weather Service's fire weather office in Wenatchee began issuing warnings. The warnings got progressively

worse, until predictions called for the worst fire-weather year in three decades.

The first action of consequence came several hundred miles to the south. Fire, apparently man-caused, erupted July 13 in the Quail Creek area, near the Rogue National Wild and Scenic River

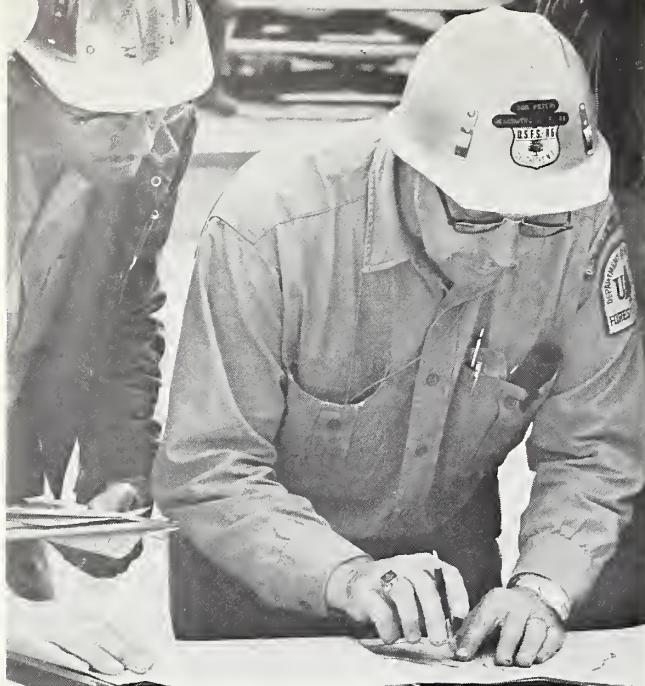
### The 1970 Fire Season

On lands protected by the Forest Service, Pacific Northwest Region, in Oregon and Washington.

Number of Fires	1970	Average for Last 5 Years
Lightning -----	2,009	1,042
Man-caused ----	<u>1,375</u>	<u>753</u>
	3,384	1,795

### Acreage Burned

Lightning -----	156,384	5,671
Man-caused ----	<u>4,527</u>	<u>13,979</u>
	160,911	19,650



At the Alta Lake Fire Camp, Fire Boss Don Peters plots strategy against the Okanogan National Forest zone of the Mitchell Creek Fire. After starting in the Wenatchee National Forest above Lake Chelan, fire crossed the divide into the Okanogan Forest, and eventually burned 42,500 acres.

of Oregon. For a time, the fire threatened the small community of Marial in the heart of the Wild River area. As the Quail Creek Fire neared control (at 2,800 acres), ominous clouds were building into anvil-topped towers over the southern Oregon Cascades. Soon, a violent lightning storm was moving north along the Cascades. Numerous fires were burning July 15 in Oregon, but all were soon manned or under control. Then the storm ripped into Washington — first across the Yakima Indian Reservation, and then up both sides of the Cascades to Canada. By late in the day July 16, 227 lightning-set fires were burning on the Snoqualmie, Mt. Baker, Okanogan and Wenatchee National Forests. Fires also burned on the Olympic and Gifford Pinchot National Forests, and scores of fires were spreading on lands protected by the Bureau of Indian Affairs, Washington State Department of Natural Resources, and National Park Service.

Most of the fires confronting the Forest Service were not readily accessible, resulting in the biggest aerial firefighting operation in Pacific Northwest history. Records were set for the Forest Service's pioneer North Cascades Smokejumper base, with 480 jumps on 81 different fires. Fifteen aerial tankers joined the attack, dropping 636,000 gallons of fire-retardant slurry. Thirty-eight helicopters were working on the fires at the peak of action. Use of aircraft, both fixed-wing and helicopters,

was so heavy that FAA-manned portable control towers were set up at the Omak and Intercity (Winthrop-Twisp) airports. Meanwhile, incoming firefighting crews from every National Forest Region were converging on north-central Washington.

At the peak of action during the July "bust", 6,427 men were on the fires. Among the more unique of the crews was a special team of skilled mountaineers, assigned to fall and mop-up burning snags in almost inaccessible rocky crags.

Finally, the last of the fires was controlled, some two weeks after the storm that started it all. Fires on Forest Service-protected lands were held to 28,468 acres, with the 15,090-acre Safety Harbor Fire near Lake Chelan being the biggest. Achieving international dimensions, the Bunker Hill Creek Fire along the Canadian boundary burned 2,080 acres of the Pasayten Wilderness.

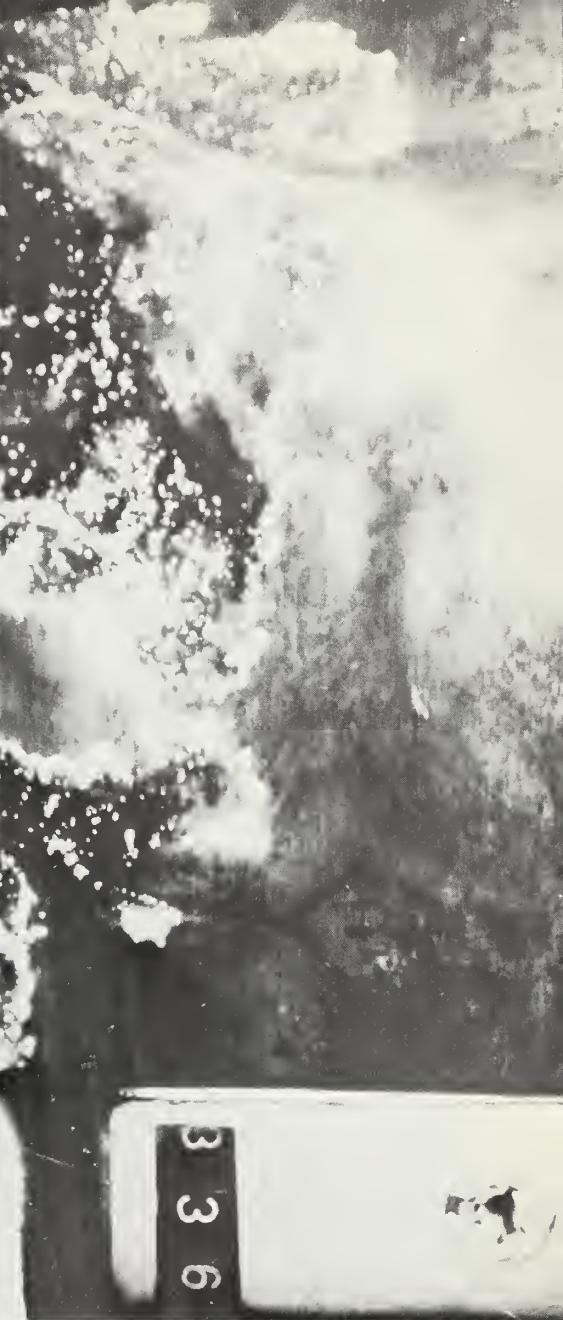
At the height of the July crisis, Regional Forester Charles A. Connaughton appraised the situation. Speaking from experience gained over a 42-year career, Connaughton said that as bad as things were, the situation would be far tougher if it were a month later, after another 30 days of critical drying conditions.

His words were a prophecy.

On August 21, "red flag" lightning warnings were issued again. Once again, a storm began moving north along the Cascades, starting in southern Oregon. On August 23, the Willamette and Deschutes National Forests reported 70 new fires. Smokejumpers and other reinforcements were dispatched into the troubled area. Once again, the storm flashed and thundered its way northward over the critically dry forests of Washington State. In the pre-dawn hours of Monday, August 24, 91 fires were set in north-central Washington, largely in the Wenatchee National Forest. Already alerted to the danger, standby crews were manning many of the fires within minutes after detection. Strikes continued to occur as crews headed toward the crimson glows of fires already started. During the next few hours, there were numerous heart-breaking instances of fires almost being contained — then all being lost in a sea of flames.

One exhausted crew foreman's description was typical:

"We just about had a line around our fire. Then the wind blew it right over our heads. We were lucky to get out of there."



337

Full extent of the 5,100-acre Fork Fire, Okanogan National Forest, is shown in infra-red aerial photos taken at 4 a.m., July 21. Infra-red photos from Firescan aircraft penetrate smoke to depict hotspots. Prints can then be dropped to fire strategists on the ground.

"We did what we could. But it wasn't enough," reported another tired crewman.

At dawn, aerial tankers and smokejumpers joined the attack.

It wasn't enough.

While most of the smaller fires were contained in relatively short order, more than a dozen blazes were fanned as sure to reach project size. A massive mobilization campaign was launched — a campaign ultimately involving more than 8,500 men, and costing an estimated \$13 million.

What would have been required, in the way of manpower and equipment, to stop the fires during the crucial first 24-hour burning period after the lightning strikes?

District Rangers of the Wenatchee National Forest later asked themselves that question, and concluded they could have stopped most of the fires if:

— 1,600 men were ready to go at dawn, August 24, along with 38 helicopters, 50 air tankers, and 230 smokejumpers. But immediate resources nowhere near approached the need, as much of the



Workers from private industry played a big part in suppressing the north-central Washington fires — folks like Bill Louck, above, of Mack Lloyd Logging and Construction, Twisp, bulldozing a fireline on the Mitchell Creek Fire. Far from their coastal forest, Coos Bay, Oregon, loggers Al Handsaker Jr., left below, and Cecil Morris, pause after falling a burning danger snag near the ruins of a summer home along the Entiat River.





In a fearsome scene suggestive of an atomic explosion, great columns of smoke tower skyward from the Mitchell Creek Fire in this aerial photo taken around 3:30 p.m., August 24, some 12 hours after the fire started. Heat energy released by such a fire exceeds that of a nuclear blast.

Charlie Blackburn, Okanogan National Forest, radios for a helicopter water drop to cool a hotspot on the Mitchell Creek Fire.



One of camera-sound teams from Metro-Goldwyn-Mayer records line building action on Mitchell Creek Fire. One-hour documentary, "Wildfire!", was later viewed by millions watching NBC television.





Using a sling-loaded fiberglass bucket, a Bell 205 helicopter lifts 350 gallons of water from a pond along the Entiat River, and heads for a hotspot of the nearby fire. Knock-out plugs in the side of bucket regulate level of water carried.

Washington fires alone. More correctly, about 100 of the firefighting personnel were women, capably filling jobs ranging from cooking, to driving and timekeeping.

The ultimate job of controlling the fires required 50 helicopters, 13 air tankers, 75 bulldozers, and 67 ground tankers. One of the big lessons learned well was the worth of larger helicopters — those capable of hauling large amounts of cargo, or 10 or more fully equipped firefighters. Most of the 'copters were also fitted for use of water and retardant buckets.

"It was a whole new ball game for mobility," said one veteran fire strategist.

As the battle continued against the Washington fires, another lightning storm was building over northern California. The storm moved into southern Oregon August 29, and continued the familiar course toward Canada. By August 31, 453 new fires had been set in Oregon and Washington, along with 55 man-caused fires. The date of August 31 also coincided with total manpower mobilization reaching a peak of 11,248 persons assigned to fires throughout the Region.

This time, a welcome combination of higher humidities, lower temperatures, and little or no wind, came to the assistance of harried firefighters. Also, forces already mobilized to combat major fires were diverted to meet the new threats.

A lightning-caused fire on the Rogue River National Forest was the only new blaze to reach campaign proportions, and it was held to 230 acres.

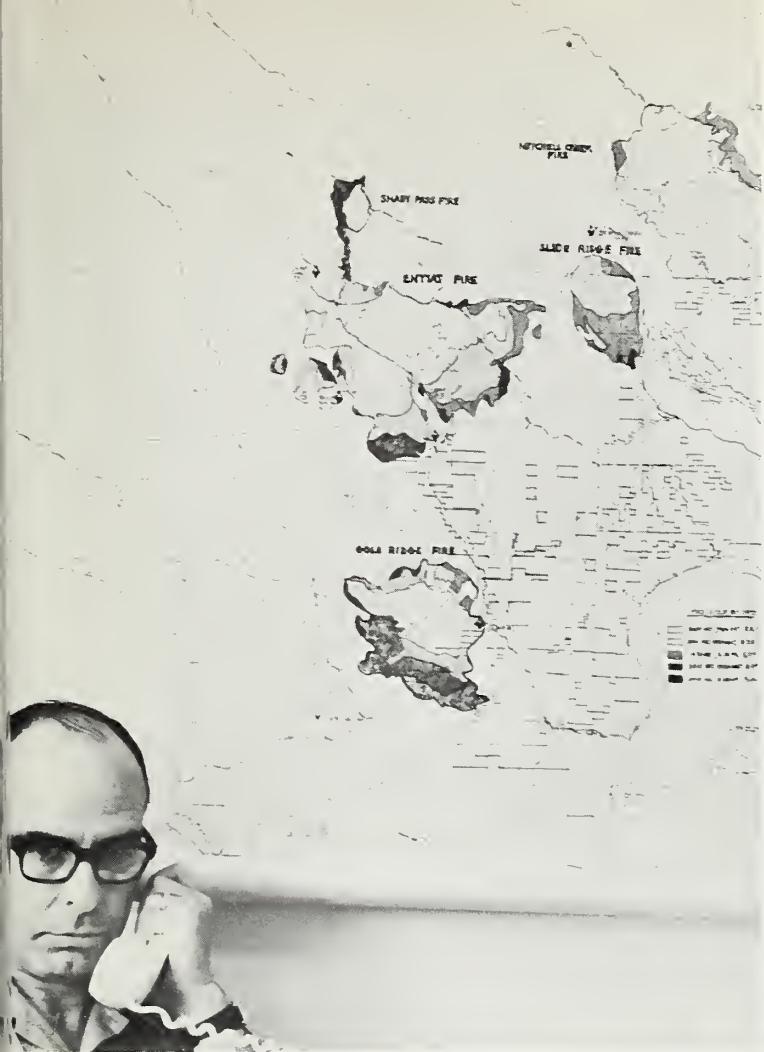
In north-central Washington, meanwhile, the long fight against the worst and costliest fire outbreak in recent history finally came to a smoky end on September 11, when the last fire was declared under control. Although numerous injuries, mostly minor, were recorded, the campaign cost only one life. A firefighter was injured fatally by a falling snag. Total size of the area burned was 112,700 acres — about 20 percent of the fire loss for all Forest Service-protected lands in the country in 1970.

Days before the last of the fires were controlled, teams of specialists were planning vital rehabilitation measures for the ravaged forests.

Region's initial attack forces were already committed. Actually available the first morning were 250 men, three helicopters, three air tankers, and some 30 smokejumpers.

By the afternoon of August 26, 14 fires had burned almost 60,000 acres. They ranged in size from 100 acres, to the then-39,000-acre Mitchell Creek Fire which started on the Wenatchee National Forest, and was well into the Okanogan. Three days later, several fires in the Entiat River drainage had joined together to form the main Entiat Fire, which ultimately reached 52,721 acres.

As the mobilization continued, trained firefighters arrived from every National Forest in the country, along with crews from other agencies, help from the Army, private industry, and other volunteers. Organized native crews from above the Arctic Circle joined Mexican Americans and American Indians from the desert Southwest and elsewhere. Mobilization reached a peak on August 31, when 8,581 men were on the north-central



Great mobility and lifting capacity by helicopters was much appreciated by fire strategists like Frank Lewis, faced with formidable logistics problems of moving manpower and equipment to strategic locations on several major fires (note Wenatchee NF fire map on wall). Above right, turbine-powered Vertol Chinook lifts off with sling-load of supplies for remote fire camp. Below, Bell 205, also turbine-powered, makes twilight take-off with firefighters headed for night duty. The 205 can haul up to 14 men.





### Air Attack on Fires

The 1970 fire season probably broke all records in the use of aircraft against forest fires. In the Pacific Northwest Region of Oregon and Washington, fixed wing aircraft dropped 3 million gallons of fire retardant on fires fought by the Forest Service. Helicopters applied nearly half a million gallons of retardant, and some 3 million gallons of water.

In action depicted here, a T-34 lead plane pulls up sharply after pointing the way for a B-17 to swoop in through the smoke with a 2,000-gallon load of retardant to be dropped on a crucial point of the fire.

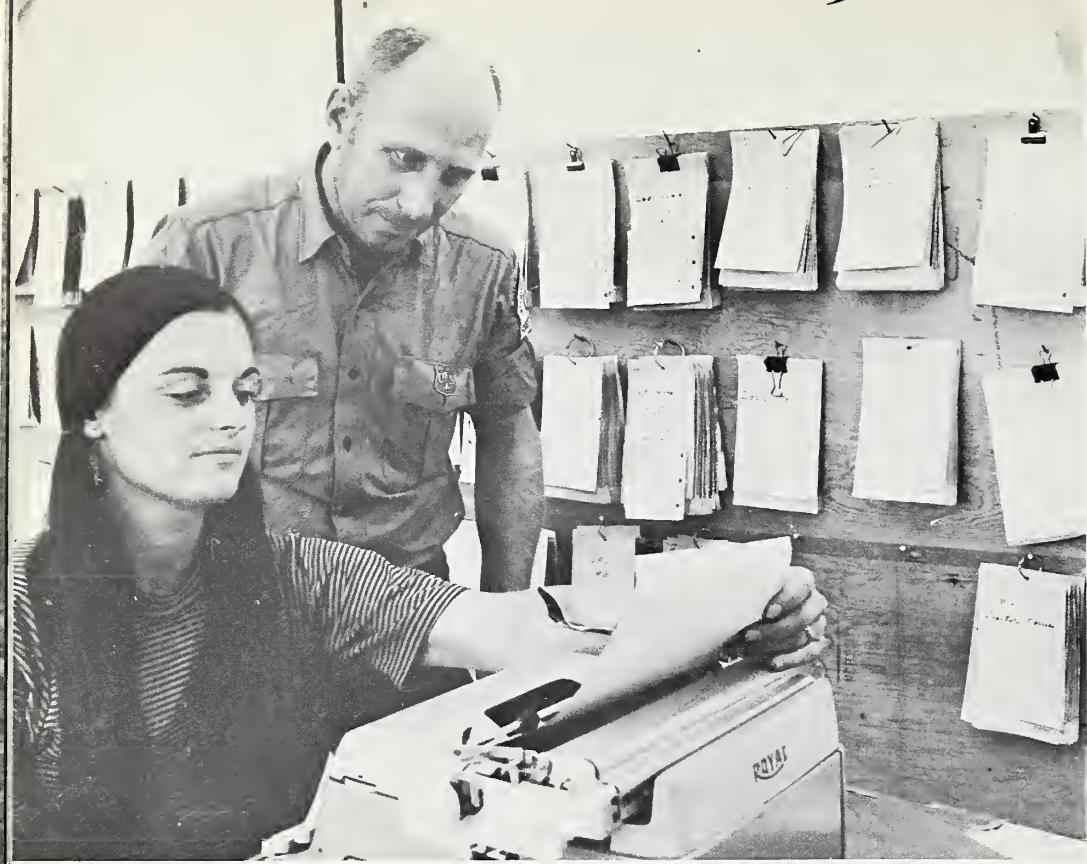
Representative of the airmen engaged in the airborne battle against fire is veteran Forest Service lead plane pilot, Gar Leyva, Medford, Oregon, whose fire season usually begins in early spring in the South-eastern United States, and ends in late fall in California, with Southwest and Northwest duty in between.

Then there are days, frustrating to pilots and ground firefighters alike, when the big birds are grounded by smoke, as at Wenatchee's Pangborn Field, right, during the height of last summer's fire crisis. Shown are two silhouetted B-17s, and a jet-assisted P2V Neptune.



All available smokejumpers in the Western United States were committed to fires in Oregon and Washington at least three times during the 1970 fire season. It was the greatest use of jumpers in the 30-year history of smokejumping in the Pacific Northwest. A total of 578 fires were jumped.





Call it women's lib or what you will, but women made a noteworthy contribution to the firefighting effort in north-central Washington last summer. Some 100 women volunteers were assigned to the fires in various jobs, ranging from timekeeping to driving. Above, Pat West, Entiat, checks timekeeping records with Lewis Stull, Shasta-Trinity National Forest, at the Gold Ridge Fire Camp. Right, Danielle Yoakam, Forest Service Regional Office employee from Vancouver, Washington, was assigned as a timekeeper at 25-Mile Camp for the Slide Ridge Fire.



Mexican-American and Indian professional firefighters from the Southwest line up for breakfast at one of the Entiat Valley fire camps. Highly trained and experienced crewmen such as these were a mainstay in the firefighting effort.



In the chill of night, this fire suppression crewman welcomes the warmth of his enemy by day.



## Wildfire Aftermath

The big lightning "busts" of July and August left vast acreages blackened in two major watersheds of north-central Washington.

About 11 percent, or 105 square miles of the Lake Chelan drainage was burned; along with 100 square miles, or 25 percent, of the Entiat River watershed.

Toll of resources lost or damaged in the fires included an estimated 700 million board feet of timber, some of which would be salvageable; more than 20 summer residences; cover and some instrumentation on the Entiat Experimental Watershed; three campgrounds; trail bridges; an irrigation collection system; and many acres of forage for wildlife and livestock.

Potential floods in the aftermath of the fires could exceed the losses and damages already sustained. Emergency flood prevention, erosion control, and other rehabilitation steps were necessary to protect downstream life, health and property.

While ashes were still cooling, rehabilitation planning was underway. Teams of specialists in timber, watershed, range, wildlife, and outdoor recreation, were assigned to the task. Ecology, soils, hydrology, entomology, silviculture and reforestation, wildlife biology, logging, and landscape management were among the specialties represented. Rehabilitation planning efforts were coordinated with concerned private, federal, and state organizations, working through local Rural Area Development committees, as the fires also burned considerable state, private, and federal acreage outside National Forest boundaries.

With the snow level already creeping down from the Cascade Crest, the massive on-the-job rehabilitation job had to be started as soon as possible.

Contracts for grass seed and fertilizer were let. Forest Service aircraft, engaged in the firefighting effort just a short time before, were fitted with special hoppers and spreaders for applying seed and fertilizer. Contract helicopters joined the aerial phase of the rehabilitation effort. At the same time, work on the ground began with more than 70 men assigned to stream channel clean-up, and construction of trash racks, sediment traps,

Forester apprises devastation on Coyote Creek in wake of Safety Harbor Fire, biggest of the July blazes on the Wenatchee National Forest.



Summer home ruins at Fox Creek formed part of the dismal mosaic along the Entiat River after the wildfire had spent its fury.





Rehabilitation program after fires on Wenatchee and Okanogan National Forests included construction of 37 trash racks such as this one on Coyote Creek, Safety Harbor burn. Racks are designed to catch debris during runoff periods. Below right, forest worker cuts charred and downed logs into small sections for piling and burning in stream clearing job.

check dams, and log booms to catch debris in Lake Chelan. The labor force was hired locally for the task.

Completed in early December at a cost of around \$1 million, the initial emergency rehabilitation work included: Grass seeding, 51,500 acres, with 170 tons of seed; fertilizer application, 38,500 acres, with 1,600 tons of fertilizer; stream clearing, 50 miles; trash racks completed, 37; settling ponds, 6; check dams, 224; log booms, 6; fireline cross-drained, seeded and fertilized, 215 miles; bitterbrush seeding for wildlife forage, 152 acres; tree seeding, 324 acres.

In the spring of 1971, some 2,100 acres in the burned areas will be planted with tree seedlings. Long-range reforestation plans for the burns will be made during the spring and summer of 1971.

Rehabilitation work on the Safety Harbor burn, and some of the Okanogan fires, was financed by





Used a few weeks previously for carrying smokejumpers and firefighting equipment, a Forest Service C-45 spreads fertilizer granules over burned forest to encourage new growth. Commercial helicopters were also contracted for aerial fertilization. Below, Dr. Fred Hall, Forest Service plant ecologist, probes ashen soil for evidence of what once grew here, and what might grow again.

\$300,000 allotted by the Secretary of Agriculture under the Flood Control Act of 1950.

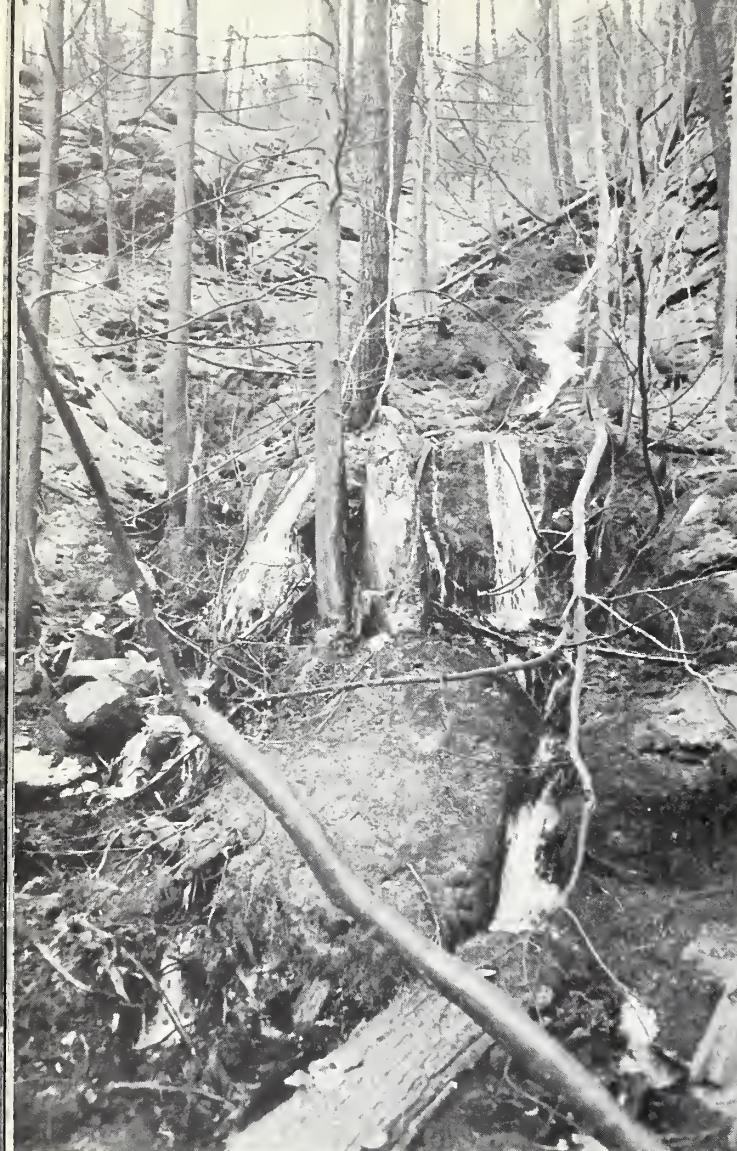
Forest Service funds originally appropriated for other purposes were re-allocated for emergency work on the Entiat, Gold Ridge, and Mitchell Creek fire areas on National Forest lands.

## Burned Timber Salvaged

About 130 million board feet of burned timber was scheduled to be salvaged in the wake of the 1970 fire disasters in the Wenatchee and Okanogan National Forests.

Preparation of fire-damaged timber sales began immediately after the fires were controlled. By December 31, thirteen sales totalling 25.4 million





Fox Creek after the fire, Entiat Experimental Watershed, Wenatchee National Forest. Out of the ashes, a new research effort.

## Phoenix Rises in Entiat Ashes

To the ancient Egyptians, phoenix was a legendary and beautiful bird rising from its own ashes to start another long and useful life.

Research scientists of the Pacific Northwest Forest and Range Experiment Station found a parallel to the phoenix legend, after flames ravaged the Entiat Experimental Watershed during the early phase of 1970's Entiat Fire.

After their initial sadness at seeing years of work wiped out, watershed scientists decided to convert a scientific disaster into scientific knowledge.

And thus, Operation Phoenix was born.

Instead of research aimed at increasing water yields from a typical forest on the east-slope Cascades, the program became one of evaluating the effects of a destructive wildfire on a watershed.

Effectiveness of emergency rehabilitation and erosion control measures will be determined, and new rehabilitation methods will be developed and tested. Looking further ahead, scientists foresee opportunities for managing or manipulating new vegetation to influence water yields from the burn.

## Research Directed at Reducing Forest Fuels

The 1970 forest fire crisis in north-central Washington was met head-on with the best modern mechanization and manpower force the Forest Service could muster. Still, control efforts were stymied time and again, and weather and topography were just part of the problem.

Presence of heavy and continuous ground fuels in many areas was one of the biggest factors working against firefighters, as the fires spread rapidly through dense fuel concentrations.

This most recent experience with disastrous wildfires gave added impetus to a new research project announced by the Pacific Northwest Forest and Range Experiment Station. The project, starting in January 1971, was directed at providing new methods for forest residue reduction, including slash disposal, improved utilization of ma-

board feet had been sold to four high bidders. An additional eight sales with an estimated volume of 23.6 million board feet will be offered by June 30. Between July 1 and December 31, 1971, an estimated 60 million board feet will be offered in four separate sales.

Salvage logging began in October on eight of the 13 existing fire-salvaging sales. Heavy snows in December curtailed two operations, while six continued to operate through the winter. In the Entiat Valley, the mill at Ardenvoir went into a double-shift schedule to handle the accelerated volume of salvage timber. Both mill and town, ironically, were threatened during the Gold Ridge Fire in late August.

Plans for logging fire-damaged timber in the Entiat Experimental Watershed were in progress. An estimated 27 million board feet will be offered for sale in August 1971. Skyline logging methods will be required.

terials now wasted, and lowering of fire hazard in natural fuels in Pacific Northwest forests.

Research scientists from the Seattle-based project will cooperate with other scientists from many disciplines, plus private forest industries, government agencies, and universities in seeking solutions to residue problems.

## States Battle Fires Also

It was a long, hot, and exceedingly expensive fire season for the Washington State Department of Natural Resources, while Oregon's Forestry Department was far more fortunate.

Both states, since 1907, have received federal cooperative assistance to help finance forest fire prevention and control. Currently, both Oregon and Washington each receive about \$500,000 yearly in federal funds, or about 13 percent of the total fire protection costs for the two states.

In 1970, Oregon had more lightning-caused fires and also more man-caused fires than in any year since 1938. However, the 10,556 acres burned was only a fraction of the 341,510 acres that burned in 1933. Also, the 1970 figure was 6,000 acres less than the average annual burned acreage for the last 10 years.

In Washington, the number of fires on state-protected lands was less than the 2,266 fires of 1951, and the acreage burned was less than the 395,914 acres burned in 1929. However, the 61,367 acres blackened in 1970 was more than 10 times the average for the last 10 years.

Hotspot in Washington was Okanogan County, where the July 15 lightning storm set 80 fires that eventually burned 42,813 acres. The critical situation resulted in declaration of a disaster area, and authorization for federal funds from the Office

### The 1970 Fire Season From States' Standpoint

On lands protected by the Oregon State Forestry Department and Washington State Department of Natural Resources.

	Oregon	Washington
Lightning Fires	568	203
Man-caused Fires	1,107	1,769
Total Fires	1,675	1,972
Total Acres Burned	10,556	61,367
Acres Protected	14,608,559	11,515,880



Opened by extreme heat, charred lodgepole pine cones release seed onto blackened earth, as Nature attempts to heal own wounds.

of Emergency Preparedness to help pay suppression costs.

As was the case on National Forest lands, burning conditions in the Okanogan area were among the most severe on record. Winds spread 10 fires to more than 1,000 acres in size before Department of Natural Resources crews could get them under control. These fires alone cost more than \$500,000 to suppress. The state was plagued by fires for the rest of the season, which was continued into mid-November by dry east winds.

### Other Cooperative Programs

Other federal funds are appropriated to the Forest Service for distribution to the states for promotion of forest management and reforestation on state and private lands. The states administer the programs and hire personnel to do the work. Farm foresters in each state work directly with smaller forestland owners and advise them on forest management.

In 1970, the 24 farm foresters in the Pacific Northwest Region assisted 4,235 woodland owners owning or controlling 238,965 acres. Gross returns from the private lands totalled \$3.7 million. Timber stand improvement was carried out on 8,638 acres, and 5,161 acres were planted or seeded.

## Timber Harvest Declines

A soft lumber market and a continued low level of home construction contributed to another decline in the harvest of National Forest timber in the Pacific Northwest during 1970.

Total volume of timber harvested decreased from 4.89 billion board feet in 1969, to 4.10 billion board feet last year. Value of the timber harvested was likewise on the decline, from \$196.5 million in 1969, to \$140.2 million in 1970.

Volume of timber sold from the National Forests of the Pacific Northwest last year rose from 4.59 billion board feet in 1969, to 5.42 billion board feet in 1970. Sale value dropped from \$257.3 million in 1969, to \$137.7 million last year.

### National Forest Timber Cut and Sold Pacific Northwest Region 1969-1970

		Volume, Board Feet	Value
Harvested	1970	4,102,031,800	\$140,282,770
	1969	4,892,582,060	\$196,552,873
Sold	1970	5,420,091,390	\$137,798,991
	1969	4,597,366,860	\$257,300,481

(Region 6 Sustained Yield Allowable Cut — 4,372,000,000 Board Feet)

In scenes reminiscent of the aftermath from the great Columbus Day, 1962, windstorm, trees lie tangled and broken in the Columbia Gorge area of the Gifford Pinchot National Forest. Instead of wind, this damage resulted from a severe ice storm in January of 1970.



## Ice Before Fire

Months before the fires scoured the forests of north-central Washington, another facet of Nature wrought havoc to the forest in another area.

Freezing rain fell along both sides of the Columbia Gorge during the weekend of January 17, 1970. Ice accumulated on the trees for three days. Many trees were unable to withstand the tremendous weight of the ice build-up. Larger trees snapped under the strain, and smaller ones were uprooted.

Immediately after the storm, an aerial reconnaissance determined that approximately 102.1 million board feet of timber was damaged, mostly on the Gifford Pinchot National Forest, but also in the Mt. Hood Forest across the river.

Immediate salvage was begun to recover the downed timber, and reduce the possibility of a breeding ground for a Douglas-fir bark beetle epidemic. By the end of 1970, a total of 86.6 million board feet of ice-damaged timber had been sold.

## Forest Improvements

Reforestation was accomplished on 71,972 acres of National Forest land in the Pacific Northwest Region during the 1969-70 season. Direct seeding involved 8,761 acres, while 63,211 acres were





Beauty and utility of a well-managed forest is apparent in this City of Corvallis watershed view on Marys Peak, Siuslaw National Forest. Commercial logs decked for hauling have been thinned from the 90-year-old stand of straight-trunked Douglas-fir.

planted with 22.3 million seedlings. Forest Service nurseries at Wind River, Washington; Bend, Oregon; and Arcata, California, produced 19 million of the seedlings, and the rest came from the State of Oregon Forestry Commission's Elkton Nursery, and the L. T. (Mike) Webster Forest Nursery operated by the Washington State Department of Natural Resources.

In timber stand improvement activities on Pacific Northwest National Forest land last year, pre-commercial thinning was accomplished on 59,858 acres, while timber stand release involved 15,585 acres; pruning was done on 562 acres, and 358 acres were fertilized.

## Forest Access Progress

Congress has authorized \$70 million in Forest Service-wide expenditures for accelerated timber access development in Fiscal Years 1970 and 1971. Objective of the program is to help assure access to future timber supplies for housing and other needs.

Most of the expenditures were destined for the National Forests of the Pacific Northwest Region. Fourteen projects were contracted in Fiscal Year 1970 at a total cost of \$16.9 million. One project has been completed, and three should be finished



Man and Nature can work in concert to maintain productive forests. Here on the White River Ranger District, Snoqualmie National Forest, area on left was clearcut harvested in 1949; is now well-stocked with young conifers 15 to 20 feet high, from natural seed sources. Open stand at right resulted from selective harvest in winter of 1967-68 to remove scattered blowdown timber and some standing trees.

in 1971, with the remainder to carry over into 1972. For Fiscal Year 1971, 10 projects were approved for the Region at a cost of \$12 million. Three projects were contracted, and the remaining jobs will be advertised and awarded by July 1, 1971.

In forest access development work apart from the accelerated program, improvements valued in excess of \$50 million were accomplished on the road and trail system in the Region. A total of 2,176 miles of road was constructed or reconstructed, mostly by timber sale purchasers as part of their contract. Fifteen new bridges were completed. Trail work totalled 24.1 miles of construction or reconstruction, along with three new trail bridges.

The trail accomplishments included 12.5 miles of Pacific Crest National Scenic Trail completion, and work began on another 32.4 miles of Crest Trail.

## County Income Lower

Oregon and Washington counties with National Forest lands received \$40.8 million in receipts from National Forest earnings in fiscal year 1970. The total was \$2.1 million less than the record \$42.9 million allocated to the counties in 1969. Earnings to the counties represent 25 percent of receipts from all resources and uses of the National Forest, including timber harvest, grazing, minerals, recreation, power, and other land use.

The 1970 total was \$40,796,665.33, with 31 Oregon counties receiving \$27,514,123.35, while 27 Washington counties received \$13,282,511.98. Lane County continued to receive the biggest share in Oregon, \$6.2 million, while Skamania County remained high in Washington, with \$3.7 million. Since 1906, Oregon counties have received \$273.2 million, while Washington counties have

been allocated \$122.7 million. Payments are proportioned according to National Forest acreage, with counties using the money for public roads and schools.

## Forest Insects, Disease Continue Taking Toll

Several insects and diseases caused extensive damage to timber in the Pacific Northwest in 1970. Major insect damage resulted from bark beetles of various species. The Douglas-fir bark beetle was again the major villain in southwest Washington, and populations of the beetle appeared to be building in northwestern Oregon in the wake of the January 1970, ice storm.

In eastern and central Oregon, the mountain pine beetle had attacked more than 26 million board feet of lodgepole pine timber on 50,000 acres.

Moving steadily southward in eastern Washington, the larch casebearer was also found for the first time in Oregon in 1970, as infestations were discovered in the Blue Mountains of the Umatilla National Forest.

New infestations of spruce budworm were detected at 26 locations in northeastern Oregon and southeastern Washington. This defoliating insect is increasing in numbers and may again become a problem. The spruce budworm has not been a major forest killer since extensive control efforts were accomplished in the late 1940s and early '50s.

The balsam wooley aphid, a sucking insect that attacks true firs, is continuing its threat to subalpine firs and Pacific silver fir in the higher elevations of Washington and Oregon.

Extensive damage from a native pine shoot moth in southeastern Oregon was discovered in 1970. The insect, feeding on the buds of terminal and lateral pine branches, has caused loss of untold volumes of timber. Though apparently occurring for many years, the damage was just recognized as being caused by the shoot moth.

Dwarf mistletoe continues to be the major disease affecting Pacific Northwest timber. Loss is primarily caused by reduced growth induced by the parasitic nature of the disease. Root rots and heart rots also continue to take a heavy toll of all tree species in the Northwest.

Salvage and sanitation logging and other intensive timber stand management practices were directed at reducing losses to timber insects and disease.



Larvae of larch casebearer emerge from mined-out needles. Hope of controlling destructive insect may rest with a small parasitic wasp as natural enemy. Native of Europe, larch casebearer has been found for first time in forests of Oregon.

## Bigger Role For Soils Men

The importance of soil as one of the most precious irreplaceable resources has long been recognized, and efforts are continuing to acquire the scientific expertise necessary to better manage this very basic element of our environment.

Recent additions of soil scientists have strengthened the soils aspect of multiple use management in the National Forests of the Pacific Northwest. Twelve soil scientists are presently assigned in the Region. Four of the specialists were placed in 1970, and plans call for five more to be added in 1971.

The soil scientists provide special management assistance for various resource functions in activities such as transportation system planning, road construction and maintenance, timber sale planning and administration, recreation planning and development, watershed management planning, tree nursery operation, land classification, and fire rehabilitation planning.

In addition, three soil scientist teams in the Region are working on soil inventories to provide basic data for multiple use planning. Soils reports already published for the Olympic and Mt. Baker National Forests are now in use, both by National Forest planners and by other organizations interested in land use planning.



Accurate and up-to-date mapping is a vital tool in National Forest management, and also serves the needs of National Forest visitors. Helping to draft the maps is Karen Haynes, University of Portland student employed in the Forest Service Regional Office's cartography section.

## Land Trades Benefit National Forests

Land exchanges and purchases involving some 12,000 acres were completed during 1970 for the purpose of blocking up National Forest ownership. In the process, the Forest Service acquired key recreation lands within the Rogue Wild and Scenic River zone, and within the proposed Oregon Dunes National Recreation Area.

The largest single exchange, involving about

7,200 acres, was negotiated with the State of Oregon. The Forest Service acquired scattered tracts in seven eastern Oregon counties, and the State of Oregon received lands adjacent to other state holdings south of Crater Lake. Land management for both the Forest Service and the state will be simplified by the exchange.

Final negotiations were also completed between the Forest Service and the Murphy Company, Portland, for the Mt. Hood National Forest to acquire 360 acres in the scenic Oneonta Creek area of the Columbia Gorge. The Murphy Company, in return, will receive 322.5 acres in eight separate parcels on the Willamette National Forest, adjacent to the town of Oakridge. The exchange will provide more commercial land for Oakridge's growth, and will give further protection to the Columbia Gorge's scenery. The Mt. Hood Forest will retain the natural setting on the 360 acres it is acquiring. Only trees endangering public safety would be removed.

Looking ahead, the Forest Service embarked on a new program of land-use planning in 1970. Studies will involve identification of lands that meet National Forest long-term purposes, and a determination of lands that should be added or deleted from the National Forest system. Decisions reached in the studies will be used to formulate future land-adjustment plans and programs. Interested private citizens, organizations and groups, as well as other public agencies, will be involved in the study process.

Negotiations made during 1970 under existing sharecost road agreements provide for construction of 220 miles of road, making accessible 12 billion board feet of National Forest timber, and 4 billion board feet of other privately and publicly owned timber. The roads will also provide public access to large areas of National Forest lands for other uses.

## Job Corps Role Important

The role of the Job Corps program in the Forest Service's Pacific Northwest Region increased in significance as unemployment hit hard at the under-educated in 1970.

Training programs at the Region's three Civilian Conservation Centers became more sharply focused upon specific job and attitudinal training. Job placement for trained Job Corps graduates was relatively high, despite a depressed labor market.

More federal agencies were showing interest in

Job Corps graduates, and several were hired by Forest Service Ranger Districts throughout the country. During 1970, the need for Job Corps graduates by National Forests prompted the development of a forestry aid training program. The plan will be implemented in 1971.

The Region's three Civilian Conservation Centers have current training spaces for 632 Job Corpsmen — 224 each at Wolf Creek and Timber Lake on the Umpqua and Mt. Hood National Forests, respectively, and 184 at the Angell Center, Siuslaw National Forest. Training programs include automotive, building maintenance, carpentry, cooking, heavy equipment operation, masonry, painting, warehousing, and welding.

## Cispus Center Heavily Used

The Cispus Environmental Learning Center began operations in mid-1971 — a virtual outdoor classroom set in the heart of the Gifford Pinchot National Forest in eastern Lewis County, Washington.

Under the administration of the Office of Washington State Superintendent of Public Instruction, Louis Bruno, the million-dollar facility and its surrounding forest and stream area is now used as an environmental learning site for Washington State school children and adults.

The 1970 special session of the Washington State Legislature made funds available to the Superintendent of Public Instruction to lease the land and buildings of the former Job Corps Center from the

**Instead of Job Corpsmen, students now conduct daily flag raising ritual at Cispus as old Job Corps center enters new era.**



Environmental studies engross students in stream-side outdoor classroom of Cispus Environmental Education Center.

Forest Service.

During its first half-year of operation, the Cispus Center was used by 2,396 persons, accounting for a total of 10,576 "user days". In most cases, these were school groups with week-long programs. By the end of its first operating year, the Cispus Center will have accommodated more than 6,100 persons, accounting for more than 27,000 "user days."







Gondola passengers enroute to the top of Mt. Howard have spectacular view of Wallowa Lake, towns of Joseph and Enterprise, and surrounding countryside. The scenic lift to 8,200-foot summit began seasonal operation in late summer, 1970, in the Wallowa-Whitman National Forest, as one of newest recreational attractions in Pacific Northwest. Owned and operated by High Wallows, Inc., on a Forest Service permit, the \$684,000 project was financed by bank loan insured by Farmers Home Administration of U.S. Department of Agriculture. Four-passenger gondolas rise 3,700 vertical feet from 4,500-foot level at Wallowa Lake. Atop Mt. Howard, visitors hike nature trails against backdrop of high Wallows.

## **Recreation Visits Down Slightly**

Recreational use of Pacific Northwest National Forests last year totalled 28.01 million visitor days, slightly under the near-record total of 28.02 million visitor days in 1969.

(A visitor day is a statistical measure of recreation use equal to one person spending 12 hours, or 12 people spending one hour.)

The slight decline may have been due in part to the severe forest fire conditions of late summer when many persons apparently heeded warnings of extreme fire danger in the woods, and either stayed home or went elsewhere. Also, most eastern Washington forest lands were closed to public entry August 31 to September 3, the second such closure in Regional history.

The five top National Forests for recreational use in 1970 were: Snoqualmie, in Washington, 3.47 million visitor days; Deschutes, Oregon, 3.39

million; Wenatchee, Washington, 3.86 million; Mt. Hood, Oregon, 3.32 million; and Willamette, Oregon, 2.16 million visitor days.

For the entire Region, camping led all National Forest recreation activities, with 7.9 million visitor days. Fishing and hunting accounted for 4.5 million days.

Developed sites such as campgrounds, winter sports areas, summer resorts, etc., accounted for 11.8 million of the 28.01 million recreational visitor day total in 1970.

## **Skiers on Increase**

Nearly 2 million skier visits were made during the 1969-70 season at the 31 privately developed ski areas on the National Forests of the Pacific Northwest. This was a 10 percent increase over the preceding season.

Two potential winter sports sites in southern Oregon will be offered in late 1971 for development by private capital. The sites are Pelican



Butte in the Winema National Forest, and Mt. Bailey, Umpqua National Forest. A prospectus may also be issued for another potential site, Stormy Mountain, in the Wenatchee National Forest of north-central Washington.

One other potential site, Skyline Basin in the Umatilla National Forest, Washington, was advertised for development last year, but no acceptable response was received. Interested developers were issued a temporary special use permit to develop acceptable plans and financing for presentation to the Forest Service in June 1971.

Though difficult to accurately measure, snow-

mobiling, ski touring, and other outdoor winter activities continued to grow in popularity on the National Forests.

## **Recreation Improvements**

Although funding continued to be tight, several major recreational improvements were completed or started during the last year. They included:

Siuslaw National Forest — Alder Dunes, Blackberry, and Bluebill Lake Campgrounds completed; Alsea River boat launching site reconstructed; work began on Horsfall Beach comfort station and



Photo by Jim Vincent, The Oregonian

Kayaker battles whitewater during national kayak championship competition last summer on Wenatchee River near Leavenworth. Scene is vivid contrast to canoe gliding lazily over early morning surface of Lake Wenatchee, which feeds Wenatchee River. Glacier Peak is in center distance. Wenatchee River system on Wenatchee National Forest was one of the 47 rivers identified in 1970 by Secretaries of Interior and Agriculture as having potential for inclusion in National Wild and Scenic Rivers System.

Siltcoos Campground water system. (Alder Dunes, Blackberry and Alsea projects were accomplished by Job Corpsmen of Angell Civilian Conservation Center.)

Umatilla National Forest — Most facilities completed and opened to public at new Jubilee Lake Campground.

Mt. Hood National Forest — Second-stage contract for reconstruction of ice and flood-damaged Multnomah Falls trail and visitor information facility awarded; contract awarded for modernization of Magic Mile Chairlift and 90 percent completed; contract awarded for construction of new

maintenance building as first step in modernization and expansion of Timberline Lodge complex.

Willamette National Forest — North Waldo Campground is last of three campground-boating developments completed at Waldo Lake, second largest natural lake in Oregon; Mona Campground and Lookout Boating Site completed and opened to public on Blue River Reservoir; Riverside Campground reconstruction completed and water system upgrading programmed.

Okanogan National Forest — Cutthroat Trail Head completed near North Cross-State Highway, providing access to Pacific Crest National Scenic



This symbol has been adopted for the 2,404-mile Pacific Crest National Scenic Trail from Canada to Mexico. Black conifer and white mountain range are superimposed on a blue-green background. Established under National Scenic Trail Act of 1968, Pacific Crest Trail passes through 25 National Forests, 7 National Parks, numerous State Parks, and 22 National Forest Wildernesses.

Trail via Cutthroat Creek Trail; Klipchuck Campground placed under contract for construction, to serve future North Cross-State Highway travelers.

Deschutes National Forest — New water system, comfort stations, waste water sumps to be ready next season at Gull Point, North Wickiup, and South Twin Campground complex on Wickiup Reservoir, along with fish-cleaning stations financed by Deschutes County at Gull Point and North Wickiup.

Rogue River National Forest — contract awarded to complete Fish Lake and Doe Point Campgrounds.

Malheur National Forest — Yellowjacket Campground essentially completed and opened to public.

Wenatchee National Forest — Work continued on Wish Poosh camping, picnic and boating facility on Lake Cle Elum, and should be open in 1971.

Snoqualmie National Forest — Interim camping facilities completed at Bumping Lake. Facilities designed for removal if reservoir is enlarged to flood present area.

## Toward Cleaner Waters

Significant progress was made in 1971 toward preventing or correcting water and sewage problems on National Forest lands.

A third-stage contract was awarded for water and sanitation facilities at Diamond Lake, Umpqua National Forest. The fourth-stage contract is planned for 1971 to complete the work needed for the east and south shores of the beautiful Oregon Cascades lake, where a serious pollution threat has been developing in recent years.

In the Mt. Baker National Forest, a contract was awarded last spring for construction of sewage handling and treatment facilities at Heather Meadows. The project is being financed cooperatively by the Forest Service and two permittees at the popular winter and summer recreation area.

Construction began on sewage collection systems for Forest Service facilities at Government Camp and Hood River, Mt. Hood National Forest.

Pollution studies or engineering reports were being completed for 11 additional projects in the Region.

## Visitor Facilities Proposed For North Cascade Highway

Traversing some of the most spectacular mountain scenery in the continental United States, the North Cross-State Highway is expected to be opened by 1973, or even earlier, through Washington's North Cascades.

The new road will provide additional access to the North Cascades National Park and Recreation Areas, and is expected to also greatly increase visitation to National Forest areas.

The Forest Service hopes to have essential facilities completed and programs operational to accommodate North Cross-State Highway travelers, and make their visit more pleasant and meaningful.

A \$2.05 million expenditure in Fiscal Year 1972 was proposed for priority Forest Service projects in the North Cross-State Highway corridor. If funded by Congress, the projects would include campground and picnic areas, \$1,053,300; a visitor information portal at Early Winters, \$655,100; and necessary roads, trails and trailheads, \$343,300.

Proposed projects would involve:

Early Winters Visitor Information Center and Picnic Area would become "East Gateway" to the

North Cascades. Jointly manned by the National Park Service and Forest Service, the center would provide information on the National Park, National Recreation Areas, and National Forests. The Washington State Department of Highways has agreed to share the cost of rest area facilities at the picnic site.

Polallie Campground, with 65 units, would be first major overnight campground for westbound highway travelers, and would be connected to Early Winters Visitor Center by pedestrian underpass and 600-foot trail.

Lone Fir Campground would be expanded from 20 to 50 units. Located just off the Cross-State Highway, Lone Fir is the first campground east of Washington Pass.

Washington Pass Overlook and Picnic Area, would provide a spectacular view of Liberty Bell Mountain, the headwaters of Early Winters Creek, and a wide panorama of mountains and valleys.

Washington Pass Scenic Trail, would give visitors opportunity to enjoy beauty and serenity of alpine meadows, wildflowers, and broad expanses of mountain scenery, in a 3-mile walk starting at Washington Pass Overlook parking lot.

Rainy Pass and Lake Ann Trails, both already heavily used, would be relocated and reconstructed.

Granite Creek Trailhead, would include 18 camping sites and 12 picnic sites along Cross-State Highway, at confluence of Granite Creek and Canyon Creek, where trails head out in four directions.



Sample of high country traversed by new North Cross-State Highway is shown in this aerial view, where route passes near Rainy Lake. Below, architect's sketch depicts proposed Early Winters Visitor Information Center, planned as "east gateway" to scenic North Cascades.





Cindy McReynolds, Forest Service's first woman packer.

## Woman Packer Rides High Wallowa Trails

Leading a string of five sometimes-feisty mules and a horse, Cindy McReynolds rode the trails of the lofty and beautiful Eagle Cap Wilderness last summer as the first woman employed by the Forest Service as an animal packer.

The 20-year-old Reed College coed and her pack string delivered supplies for three Wilderness ranger camps, and transported trail crew camps in the Joseph Ranger District of the Wallowa-Whitman National Forest.

Born and raised in Texas, Cindy has been around horses most of her life, and has won numerous trophies for her competitive riding skill. She wrangled horses on a Wyoming dude ranch in 1969, gaining valuable experience for her summer in the high Wallowas of northeastern Oregon.

Joseph Creek District Ranger Don Miller and Fred Talbott, district packer and range conservationist, hired Cindy as the best qualified applicant for the job.

Weighing only 115 pounds herself, the 5-foot, 4-inch Cindy loaded her pack animals with cargo



averaging 160 pounds for each, and threw the diamond hitch with ever-increasing skill. Then she was off down the trail, responsible for more than 3½ tons of horses, mules, and cargo.

Happy at working in the out-of-doors with the animals, Cindy also had time to reflect on the vagaries of Wilderness use and management.

"Most of my trips into the Eagle Cap entailed carrying supplies into the trail crews, who were continually rebuilding and maintaining the trails. On almost all my trips out, I took a full load of garbage which had been left by the people using these very trails."

About the decreasing solitude of Wilderness, she said: "The popular demand for this type of area is so tremendous that traffic jams on trails became a problem and you sometimes felt as if you needed a reservation to camp."



"I enjoy being in mountains more than any other type of country. I was thrilled to be outdoors and to be in such magnificent outdoors as the High Wallows."

"The mules are really free spirits with a lot of independence and strong will."

With saddle horse, Sonny, at Wilderness boundary.





## Osprey Habitat Dedicated

The Nation's first Osprey Management Area was dedicated last August at Crane Prairie Reservoir in the Deschutes National Forest of central Oregon.

Governor Tom McCall, Congressman Al Ullman, and Forest Service Chief Edward P. Cliff headed a list of dignitaries present for the dedication attended by some 600 persons.

The Oregon State Game Commission and the Forest Service established the Crane Prairie Osprey Management Area to assure protection for the summer sanctuary of the great "Winged Fisherman" of the Oregon Cascades.

Crane Prairie, with its unique combination of water, plenty of food fish, and ample nesting snags, has become an ideal summer habitat where the big fish hawks can hatch and rear their young. The birds spend the fall and winter months somewhere in the southern hemisphere.

Establishment of the 10,600-acre management area was seen as an important step toward assuring the future of the eagle-like bird which many authorities fear may be in danger of extinction.

The Crane Prairie Reservoir Osprey Management Area is one of a growing number of cooperative state and federal management programs

Forest Service Chief Edward P. Cliff and Oregon Governor Tom McCall unveil sign in dedication of Crane Prairie Reservoir Osprey Management Area. Forest Service and Oregon State Game Commission established area, with U.S. Bureau of Reclamation cooperating.





Milton J. Griffith, of Deschutes National Forest staff, displays whooping crane trophy awarded by National Wildlife Federation, honoring Griffith as Wildlife Conservationist of 1970. He was one of the men most instrumental in getting Osprey Management Area established.

designed to provide added habitat and protection of rare, endangered, or unique wildlife species.

#### **Nesting Trees Installed**

Over on the Wallowa-Whitman National Forest, the Forest Service gave Nature a hand by erecting three roosting trees at Phillips Lake for bald eagles, osprey, and other birds coming into the Siskiyou Valley. Such nesting sites are essential, and the birds began using the snags immediately.

#### **Elk Being Studied**

Although elk are not on endangered species lists, a study was begun in the Chesnimnus Game Management Unit to determine the effects of vehicle travel on elk distribution. The study is being conducted jointly by personnel of the Wallowa-Whitman National Forest and Oregon State Game Commission. Intensive hunting and other recreation use has increased vehicular travel in the unit, making significant changes in the wildlife habitat. This may be causing fluctuations in the elk population. The project involved collection of information before and after the hunting season. Trapping and tagging elk with numbered collars will determine any significant distribution change.

## **Cooperative Range Program Successful**

Rancher Jerry Brosnan rounded up his cattle again last fall on the land where his grandfather ran horses nearly 30 years before the Umatilla National Forest was established.

The Brosnans, of Heppner, Oregon, have held range permits on the Umatilla for three generations. It began with Jerry Brosnan's grandfather, who received a cattle grazing permit in 1906 when the National Forest was established and the permit system began. John Brosnan, Jerry's father, obtained the permit in 1928, and switched to sheep grazing. In 1954, Jerry Brosnan became the permittee and changed back to cattle.

The story is not unusual in the West, where grazing has long been an important and historic use of the National Forests. Also, the trend in

"Nesting tree" erected at Phillips Lake, Wallowa-Whitman National Forest.





Cattleman Jerry Brosnan, below, looks forward to his son and grandson carrying on grazing permit first issued to Brosnan's grandfather in 1906. Above, fall round-up from Umatilla National Forest range allotment where cooperative management program has resulted in increased herd numbers.

recent years has been toward more cattle grazing, and fewer sheep.

Jerry Brosnan's cattle operation is also a good example of where cooperation between the Forest Service and permittee has paid off. Thanks to a joint venture in range improvement begun by Mr. Brosnan and the Forest Service in the early 1960s, he has been able to increase the number of cattle grazing on his Matlock Allotment in the Ukiah Ranger District. The increase amounts to about 200 animal months on National Forest land within the allotment, and 66 animal months on leased private land.

The cooperative management plan prepared for the Matlock Allotment by Mr. Brosnan and Forest Service personnel called for construction of boundary and division fences, water developments, and range revegetation. About 31 miles of fence and 21 stock ponds were constructed through cooper-



ative financing. The Forest Service revegetated about 2,500 acres of land.

As one direct measurement of range improvement and management, the average weight of Brosnan's calves now exceeds 500 pounds when they come off the range in the fall. Ten years ago, the average calf weight was 420 pounds.

After having the permit in the family for three generations, Jerry Brosnan is now looking ahead to seeing his son, Eddie, and grandson, Greg, continue the permit.

Another cooperative management plan has brought similar results for another Umatilla National Forest permittee, William F. Barratt, on the Thompson Flat Allotment.

"This is a tremendous turning point in our range management work. Ten years ago we were involved in cutting livestock numbers, length of seasons, and even closing out allotments," said J. R. Wilkins, Umatilla National Forest Staff Officer. "There are many other allotments on the Umatilla that will be looked at for possible stocking rate increases within the next few years," he added.

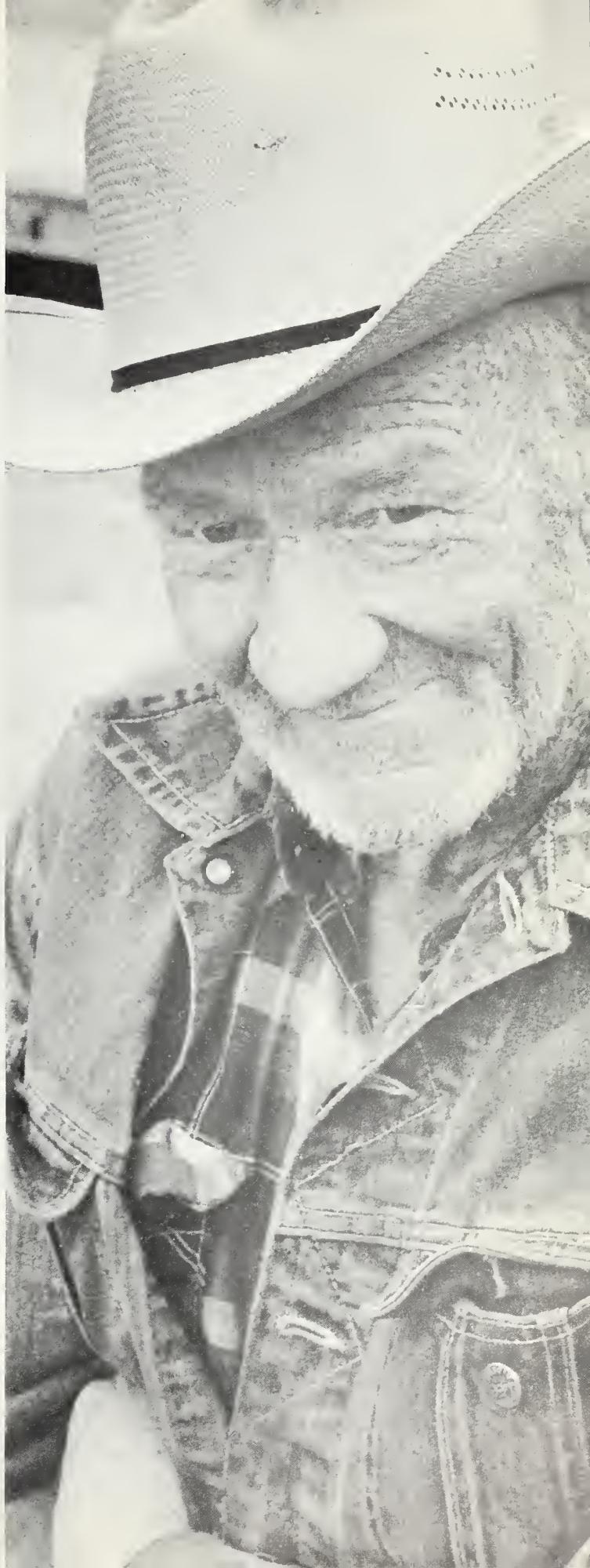
#### **More Cattle; Fewer Sheep**

Fewer sheep grazed on Northwest National Forest land last year, but cattle numbers continued to increase. There were 4,864 more cattle, while sheep declined by 5,759 head, as compared with 1969.

Total numbers of sheep and cattle grazing on the National Forests and Crooked River National Grassland declined from 204,316 animals, to 203,421 head in 1970. Grazing fees totaling \$280,805 were paid by 1,019 ranchers who used 6.8 million acres of National Forest lands, along with 647,000 acres of associated private lands.

Cooperative efforts to improve grazing land, such as the program involving cattleman Jerry Brosnan and the Forest Service, continued with permittees contributing \$307,578 in funds and labor, combined with \$385,436 in Forest Service funds. Accomplishments included 25,908 acres of range seeding; 3,897 acres treated for control of brush and noxious weeds; 135 acres of water-spreading projects; 245 miles of fence construction; 76 cattle guards installed; 103 springs developed; 181 ponds and reservoirs constructed, and 17 miles of stock driveways improved.

The range sheep business may be on the decline, but folks like Henry Warren are still tending the remaining flocks, and serve as a poignant reminder of the West that was. Henry works for a sheep outfit in the splendid isolation of Hells Canyon, Wallowa-Whitman National Forest.



**Charles A. Connaughton**  
**Regional Forester**

**Rexford A. Resler**  
**Deputy Regional Forester**

### **Assistant Regional Foresters**

Kenneth O. Wilson Fire Control	Jack H. Wood Information & Education
C. M. Hofferber Lands & Minerals	Robert E. Carey Operation
Robert H. Torheim Personnel Management	John S. Forsman Range & Wildlife Management
Philip L. Heaton Recreation	Edward H. Marshall State & Private Forestry
C. Glen Jorgensen Timber Management	Lloyd G. Gillmor Watershed Management
Ward W. Gano Regional Engineer	Reed H. Jensen Regional Fiscal Agent

### **National Forests and Supervisors**

#### **Deschutes**

Bend, Oregon  
Earl E. Nichols

#### **Fremont**

Lakeview, Oregon  
Carl W. Simpson

#### **Gifford Pinchot**

Vancouver, Washington  
Ross W. Williams

#### **Malheur**

John Day, Oregon  
Albert G. Oard

#### **Mt. Baker**

Bellingham, Washington  
Harold C. Chriswell

#### **Mt. Hood**

Portland, Oregon  
Wright T. Mallory

#### **Ochoco**

Prineville, Oregon  
Leslie J. Sullivan

#### **Okanogan**

Okanogan, Washington  
Gerhart H. Nelson

#### **Olympic**

Olympia, Washington  
Wynne M. Maule

#### **Winema**

Klamath Falls, Oregon  
Alan R. Duhnkrack

#### **Rogue River**

Medford, Oregon  
Harvey M. Seeley

#### **Siskiyou**

Grants Pass, Oregon  
William P. Ronayne

#### **Siuslaw**

Corvallis, Oregon  
Spencer T. Moore

#### **Snoqualmie**

Seattle, Washington  
Don R. Campbell

#### **Umatilla**

Pendleton, Oregon  
Herbert B. Rudolph

#### **Umpqua**

Roseburg, Oregon  
John R. Philbrick

#### **Wallowa-Whitman**

Baker, Oregon  
John L. Rogers

#### **Wenatchee**

Wenatchee, Washington  
Andrew C. Wright

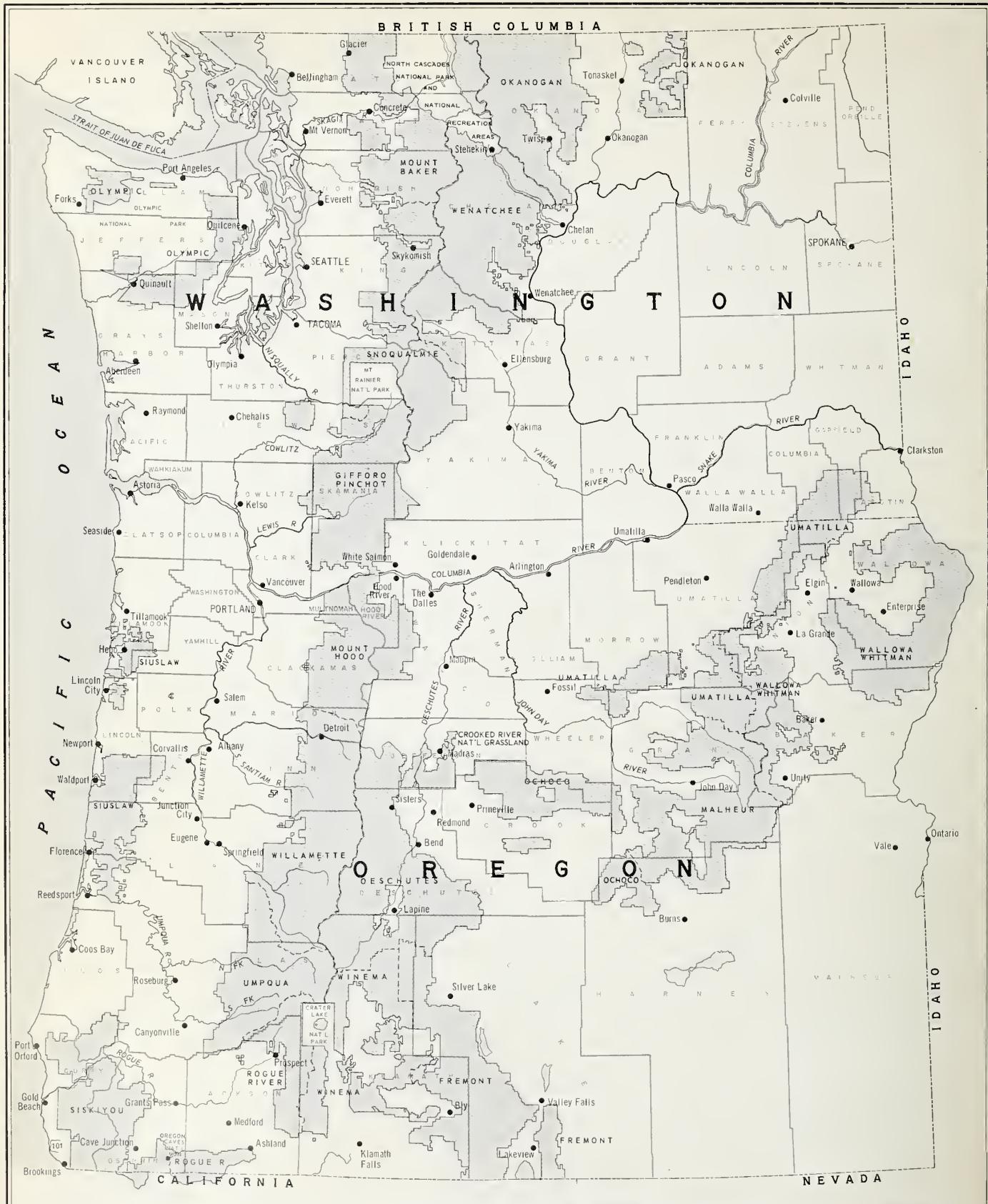
#### **Willamette**

Eugene, Oregon  
Zane G. Smith, Jr.





Freezeout Saddle appears appropriately named as Fred Talbot, Joseph Ranger District, Wallowa-Whitman National Forest, leads a loaded pack string onto the divide between the Middle Snake and Imnaha Rivers, following a spring snow flurry. Freezeout has long been used as an overland access into the remote Hells Canyon country.



U. S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE  
Edward P. Cliff, Chief

NATIONAL FORESTS  
OF THE  
PACIFIC NORTHWEST REGION

0 20 40 60 80 100 Miles  
Scale in Miles

LEGEND

- STATE LINES
- COUNTY LINES
- NATIONAL FORESTS